

In the Claims:

1. (currently amended) A carrier system for the cell-specific, intracellular enrichment of at least one pharmacologically active substance, wherein said carrier system is present in the form of protein-based nanoparticles and comprises structures and reactive groups, wherein said nanoparticles are based on at least one protein selected from the group consisting of gelatine and serum albumin, and said reactive groups couple said structures to form a coupled structure, said structures enabling a cell-specific attachment and cellular absorption of the nanoparticles, wherein the coupled structure is an antibody.
2. (previously presented) The carrier system according to claim 1, wherein the reactive group is selected from the group consisting of an amino group, a thiol group, a carboxyl group and an avidin derivative.
3. (canceled)
4. (currently amended) The carrier system according to claim [[3]] 1, wherein the antibody is a monoclonal antibody.
5. (previously presented) The carrier system according to claim 1, wherein said carrier system additionally comprises a pharmaceutically active substance that is bound to the carrier system by the reactive groups by a method selected from the group consisting of adsorption, incorporation, covalent bonds and complexing bonds.
6. (withdrawn) Use of a carrier system according to claim 1 for producing a medicament for enrichment of a pharmaceutically active substance to/in specific cells.
7. (withdrawn) A method for producing a carrier system in the form of protein-based nanoparticles for the cell-specific enrichment of at least one pharmacologically active substance, wherein said method comprises the following steps:

desolvating an aqueous protein solution to form nanoparticles;

stabilising the nanoparticles formed by the desolvation step by crosslinking;

converting part of the functional groups on the surface of the stabilised nanoparticles to reactive thiol groups;

covalently attaching functional proteins by bifunctional spacer molecules;

if required, biotinylating the antibody;

loading the functional-protein-modified nanoparticles with the biotinylated antibody; and

loading the functional-protein -modified nanoparticles with a biotinylated and pharmaceutically or biologically active substance.

8. (withdrawn) The method according to claim 7, wherein the protein base is selected from the group consisting of gelatine and serum albumin.

9. (withdrawn – currently amended) The method according to claim 7, wherein the desolvation step is carried out by a method selected from the group consisting of stirring and [[and]] adding a water-miscible non-solvent for proteins and by salting-out.

10. (withdrawn) The method according to claim 9, wherein the water-miscible non-solvent for proteins is selected from the group consisting of ethanol, methanol, isopropanol and acetone.

11. (withdrawn) The method according to claim 7, wherein said step of stabilising the nanoparticles is achieved by utilising at least one method selected from the group consisting of thermal processes, bifunctional aldehydes and formaldehyde.

12. (withdrawn) The method according to claim 11, wherein said bifunctional aldehyde is glutaraldehyde.

13. (withdrawn) The method according to claim 7, further comprising the step of using a substance as the thiol group-modifying agent that is selected from the group consisting of 2-iminothiolane, a combination of 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide and cysteine, a combination of 1-ethyl-3-(3-dimethylaminopropyl)-carbodiimide and cystaminium dichloride and dithiotreitol.

14. (withdrawn) The method according to claim 7, further comprising the step of using a substance as a bifunctional spacer molecule that is selected from the group consisting of m-maleimidobenzoyl-N-hydroxysulfosuccinimide ester, sulfosuccinimidyl-4-[N-maleimido-methyl]cyclohexane-1-carboxylate, sulfosuccinimidyl-2-[m-azido-o-nitrobenzamido]-ethyl-1,3'-dithiopropionate, dimethyl-3,3'-dithiobispropionimidate-dihydrochloride and 3,3'-dithiobis[sulfosuccinimidylpropionate].

15. (canceled)

16. (currently amended) The carrier system according to claim [[16]] 1, wherein said protein-based nanoparticles are based on human serum albumin.

17. (withdrawn) The method according to claim 7, wherein said functional proteins are avidin.

18. (withdrawn) The method according to claim 8, wherein the protein base is human serum albumin.